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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,141	01/29/2002	Masayoshi Imoto	111835	7766

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EXAMINER

PRITCHETT, JOSHUA L

ART UNIT PAPER NUMBER

2872

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/058,141

Applicant(s)

IMOTO, MASAYOSHI

Examiner

Joshua L Pritchett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This action is in response to Amendment B filed August 27, 2003. Claims 18-34 have been added since the last office action and claims 18-20 and 30 have been amended since their addition.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakata in view of Ichikawa.

Regarding claim 18, Sakata teaches an imaging device including a casing (4) disposed on an outer side of a vehicle (Fig. 11) and having a pair of right and left transmission window portions in either side of the casing (4a-b); a prism (1) contained in the casing in the form of a triangle (Fig. 1) in section with a vertical angle directed in a front part of the casing (Fig. 1), the right and left sides of the prism correspond to the equal sides of the triangle being directed to the respective right and left transmission window portions (Fig. 1); and an imaging element (13)

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disposed to the rear of the prism and used for converting a ray of light from the left and right sides of the prism into respective left and right image signals (example Fig. 12) by concentrating light on an imaging plane via an imaging lens, the ray of light being incident one of the right and left sides of the prism, reflected from the other side of the prism and emitted from the rear side of the prism to the left and right image signals (Fig. 1). Sakata lacks reference to the triangle prism being an isosceles triangle. It has been held that it is within the ability of one with ordinary skill in the art to change the shape of an object; therefore it would have been obvious to a person of ordinary skill to have the prism of Sakata be an isosceles triangle. Sakata further lacks internal reflection preventive means. Ichikawa teaches the use of internal reflection preventive means for preventing light from undergoing total reflection in the prism (col. 5 lines 35-38). Ichikawa further teaches the placement of the internal reflection preventive means at the corners of the prism (Fig. 1). Placing the internal reflection preventive means at the corners of Sakata as taught by Ichikawa would mean that at least a portion of the rear side of the prism would be covered by the preventive means. It would have been obvious to one of ordinary skill in the art at the time the invention was made to equip the Sakata prism with the internal reflection preventive means as taught by Ichikawa for the purpose of preventing harmful light from contacting the imaging element and potentially damaging the element. It would further have been obvious to have the prism of Sakata have an isosceles triangle shape for the purpose of increasing the viewing angle of the imaging device.

Regarding claims 24-27, Sakata teaches the invention as claimed but lacks reference to the internal reflective preventive means. Ichikawa teaches wherein the internal reflection preventive means includes a light scattering plane formed outside an effective area (col. 1 line 66

– col. 2 line 3). Ichikawa further teaches wherein black paint for absorbing light is applied to the light scattering plane (col. 5 lines 35-38). Ichikawa further teaches wherein light-absorbing means for light resulting from partial reflection of the light from the prism is formed in part of the side of the prism (Fig. 1). Ichikawa further teaches wherein light-absorbing means is black paint (col. 5 lines 35-38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to equip the Sakata prism with the internal reflection preventive means as taught by Ichikawa for the purpose of preventing harmful light from contacting the imaging element and potentially damaging the element.

Claims 19-21 and 30-34 rejected under 35 U.S.C. 103(a) as being unpatentable over Sakata in view of Ichikawa and Matsumoto.

Regarding claims 19-20, 30 and 34, Sakata in combination with Ichikawa teaches the invention as claimed and discussed in the rejection of claim 18 above but lacks reference to the claimed relationship between the refractive index of the prism and the internal reflection preventive means. Ichikawa teaches that it is commonly known to use a glass prism (col. 4 lines 35-36), which has a refractive index of 1.4. Matsumoto teaches that black paint has a refractive index of at least 1.7 (claim 2). The use of these two known values would cause the claimed expression to be true for light entering at all angles because the value of $\sin \theta$ can never be greater than 1 the claimed expression will always be satisfied. It would have been obvious to one of ordinary skill in the art at the time the invention was made to develop an expression to characterize the performance of the prior art combination based on known values for the purpose of anticipating the performance of the imaging device in new fields and applications.

Regarding claim 21, Sakata teaches the invention as claimed but lacks reference to the internal reflective preventive means. Ichikawa teaches the internal reflection preventive means is an internal reflection preventive film and the film is formed of black paint with a refractive index, which absorbs light (col. 5 lines 35-38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to equip the Sakata prism with the internal reflection preventive means as taught by Ichikawa for the purpose of preventing harmful light from contacting the imaging element and potentially damaging the element.

Regarding claims 31 and 32, Sakata teaches wherein corner portions formed with the side of the prism and the rear side of the prism are cut in a range to exclude a range of horizontal viewing angles of the prism (Fig. 10). Sakata further teaches the cut corner portion forms a light scattering plane (translation para. 0035).

Regarding claim 33, Sakata teaches the invention as claimed but lacks reference to the internal reflective preventive means. Ichikawa further teaches wherein black paint for absorbing light is applied to the light scattering plane (col. 5 lines 35-38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to equip the Sakata prism with the internal reflection preventive means as taught by Ichikawa for the purpose of preventing harmful light from contacting the imaging element and potentially damaging the element.

Claims 22-23 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakata in view of Ichikawa and Kadokura.

Regarding claims 22 and 28, Sakata in combination with Ichikawa teaches the invention as claimed but lacks reference to a support and a buffer. Kadokura teaches the internal reflection

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preventive means is an adhesive member (6) for sticking to the rear side of the prism (Fig. 1A); a predetermined holder (7) for supporting the prism; and a buffer member (4) for buffering the prism from vibration from the holder (Fig. 1A). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the prism of Sakata and Ichikawa have the holder and buffer as taught by Kadokura for the purpose of preventing damage to the prism while traveling underneath the car and therefore making the imaging device inoperable.

Regarding claims 23 and 29, Sakata teaches the invention as claimed but lacks reference to the internal reflective preventive means. Ichikawa further teaches wherein black paint for absorbing light is applied to the light scattering plane (col. 5 lines 35-38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to equip the Sakata prism with the internal reflection preventive means as taught by Ichikawa for the purpose of preventing harmful light from contacting the imaging element and potentially damaging the element.

Response to Arguments

Applicant's arguments filed August 27, 2003 have been fully considered but they are not persuasive.

On pages 8-10 of Amendment B, applicant argues that there is no motivation to combine Sakata and Ichikawa and that the combination of the two references is a "huge leap." The examiner disagrees. Total internal reflection is a known problem therefore one of ordinary skill

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in the art would look to limit the problem. Sakata teaches the housing and prism structure and the solution to the problem of total internal reflection is taught by Ichikawa. The fact that one prism has only one light receiving face and the other prism has two light receiving faces does not constitute a “huge leap” because total internal reflection is a problem for all prisms regardless of the number of light receiving faces. Therefore the combination of the two references would be motivated by solving a known problem in the art and is considered proper by the examiner.

On pages 10-11 of Amendment B, applicant argues that the change of the shape of the Sakata prism to an isosceles triangle is not obvious. It has been held that changing the shape of an object is within the skill of one ordinarily trained in the art. The equilateral triangle prism of Sakata is not a required shape. In fact, Sakata himself shows five different prism shapes in Figs. 1, 4, 5, 10 and 15 therefore the changing of the shape of the prism is known and it would have been obvious to one of ordinary skill in the art to have an isosceles triangle as the prism shape for large light receiving surfaces for greater viewing angles.

On page 11 of Amendment B, applicant argues that neither reference discusses stray light. The examiner admits that neither reference discusses the impact of stray light; however the prior art teachings still encompass the ability to perform the claimed attributes and therefore the claims still read on the prior art. If prior art teaches the same structural limitations of the current application the prior art would be able to perform any function claimed in the current application. See the rejection of claim 34 above for more discussion of how the claims relating to performance of the current application read on the prior art.

On pages 12-13 of Amendment B, applicant argues that the examiner used impermissible hindsight when combining Sakata and Ichikawa. As previously discussed total internal

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reflection is a known problem in the art of prisms, therefore the examiner feels no impermissible hindsight was used in the rejection. The examiner merely found a prior art reference that taught a solution to a known problem in the art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 703-305-7917. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

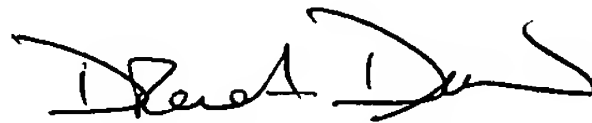
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on 703-305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JLP

A handwritten signature in black ink, appearing to read "Drew Dunn", with a stylized flourish at the end.

DREW DUNN
SUPERVISORY PATENT EXAMINER